

WHAT IS CLAIMED IS:

1. A printed wiring board, comprising:

an insulating layer having a first surface and
a second surface located on the opposite side of said
first surface;

a plurality of wiring layers formed so as to
correspond to a predetermined circuit pattern, said
wiring layers being formed by etching metal foils
laminated on said first surface and said second surface
of said insulating layer, respectively;

a via formed on said insulating layer, said via
having one end opened on said first surface of said
insulating layer and the other end closed by said
wiring layer formed on said second surface of said
insulating layer;

a first plating layer, said first plating layer
continuously covering said inner surface of said via,
said wiring layer formed on said second surface exposed
within said via and that portion of the wiring layer
which is formed on said first surface and which faces
one end of said via; and

a second plating layer, said second plating
layer being laminated on said first plating layer,
electrically connecting said wiring layer formed on
said first surface and said wiring layer formed on said
second surface by cooperating with said first plating
layer.

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2. The printed wiring board according to claim 1,
wherein said first plating layer is a conductive
substrate.

3. The printed wiring board according to claim 1,
5 wherein said insulating layer has flexibility.

4. A printed wiring board, comprising:
10 a laminate, said laminate including an insulating
layer having a first surface and a second surface
formed on the opposite side of said first surface and
a plurality of wiring layers laminated on said first
surface and said second surface of said insulating
layer and inside of said insulating layer, said
wiring layers being formed so as to correspond to
a predetermined circuit pattern;

15 a via formed on said laminate, said via having one
end opened on said first surface of said insulating
layer and the other end closed by said wiring layer
inside of said insulating layer;

20 a first plating layer, said first plating layer
continuously covering said inner surface of said via,
said wiring layer inside of said insulating layer
exposed within said via and that portion of the wiring
layer which is formed on said first surface and which
faces one end of said via; and

25 a second plating layer, said second plating layer
being laminated on said first plating layer and
electrically connecting said wiring layer on said first

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surface and said wiring layer inside of said insulating layer by cooperating with said first plating layer.

5. The printed wiring board according to claim 4, wherein said first plating layer is a conductive substrate.

6. The printed wiring board according to claim 4, wherein said laminate has flexibility.

7. A method of manufacturing said printed wiring board including said insulating layer having said first surface and said second surface located on the opposite side of said first surface and a plurality of wiring layers formed so as to correspond to a predetermined circuit pattern, said method comprising:

15 a first step of forming said wiring layers on said first and second surfaces of said insulating layer, respectively;

20 a second step of forming said via one end of which is opened on said first surface and the other end of which is closed by said wiring layer on said second surface;

a third step of covering said second surface of said insulating layer and said wiring layer formed on said second surface with a first plating resist;

25 a fourth step of continuously covering said inner surface of said via, said wiring layer on said second surface exposed within said via and said wiring layer on said first surface with said first plating layer;

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a fifth step of covering a region other than
a portion where one end of said via is opened out of
said first surface of said insulating layer as well as
said wiring layer on said first surface with said
5 second plating resist;

a sixth step of laminating said second plating
layer on said first plating layer, and electrically
connecting said wiring layer on said first surface and
said wiring layer on said second surface by said first
10 and second plating layers;

a seventh step of removing said first and second
plating resists after an electrical connection is
completed between said wiring layers; and

an eighth step of removing said first plating
15 layer exposed on said first surface of said insulating
layer along with the removal of said second plating
resist.

8. The method of manufacturing a printed wiring
board according to claim 7, wherein in said second
20 step, said via is formed by irradiating a laser at
a position other than said wiring layer out of said
first surface of said insulating layer, and said
insulating layer is scraped off in the direction from
said first surface to said second surface.

25 9. The method of manufacturing a printed wiring
board according to claim 7, wherein in said eighth
step, said first plating layer is removed by etching.

10. A method of manufacturing a printed wiring board, said method comprising:

a first step of obtaining said laminate having
said insulating layer having said first surface and
5 said second surface located on the opposite side of
said first surface and a plurality of wiring layers
laminated on said first surface and said second surface
of said insulating layer and inside of said insulating
layer and formed so as to correspond to a predetermined
10 circuit pattern;

a second step of forming said via said one end
of which is opened on said first surface of said
insulating layer and the other end of which is closed
by said wiring layer inside of said insulating layer on
15 said laminate;

a third step of covering said second surface of
said insulating layer and said wiring layer laminated
on said second surface with said first plating resist;

a fourth step of continuously covering said inner
20 surface of said via, said wiring layer inside of said
insulating layer exposed within said via and said
wiring layer on said first surface of said insulating
layer with said first plating layer;

a fifth step of covering a region other than
25 a portion where one end of said via is opened out of
said first surface of said insulating layer as well
as said wiring layer on said first surface with said

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second plating resist;

5 a sixth step of laminating said second plating layer on said first plating layer, and electrically connecting said wiring layer on said first surface and said wiring layer inside of said insulating layer by said first and second plating layers;

10 a seventh step of removing said first and second plating resists after an electric connection is completed between said wiring layers; and

15 an eighth step of removing said first plating layer exposed on said first surface of said insulating layer along with the removal of said second plating resist.

15 11. A method of manufacturing said printed wiring board including insulating layer having first surface and second surface located on the opposite side of said first surface and a plurality of wiring layers formed so as to correspond to a predetermined circuit pattern, said method comprising:

20 a first step of forming said wiring layers on said first and second surfaces of said insulating layer;

25 a second step of forming said via one end of which is opened on first surface and the other end of which is closed by said wiring layer on said second surface on said insulating layer;

 a third step of covering said second surface of said insulating layer, a region other than a portion

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where one end of said via out of said first surface of said insulating layer as well as said wiring layers on said first and second surfaces with said plating resist;

5 a fourth step of continuously covering said inner surface of said via, said wiring layer formed on said second surface exposed within said via and that portion of the wiring layer which is formed on said first surface of said insulating layer and which is other than said plating resist, by use of said first plating layer;

10 a fifth step of laminating said second plating layer on said first plating layer and electrically connecting said wiring layer on said first surface and said wiring layer and said second surface with said first and second plating layers; and

15 a sixth step of removing said plating resist after an electric connection is completed between said wiring layers.

20 12. The method of manufacturing a printed wiring board according to claim 11, wherein in said second step, said via are formed by irradiating a laser at a position other than said wiring layer out of said first surface of said insulating layer and scraps off said insulating layer in the direction from said first surface to said second surface by said laser.

25 13. A method of manufacturing a printed wiring

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board, said method comprising:

a first step of obtaining said laminate having
said insulating layer having said first surface and
said second surface located on the opposite side of
5 said first surface and a plurality of wiring layers
laminated on said first surface and said second surface
of said insulating layer and inside of said insulating
layer and formed so as to correspond to a predetermined
circuit pattern;

10 a second step of forming said via said one end
of which is opened on said first surface of said
insulating layer and the other end of which is closed
by said wiring layer inside of said insulating layer on
said laminate;

15 a third step of covering said second surface of
said insulating layer and a region other than a portion
where one end of said via is opened out of said first
surface of said insulating layer as well as said wiring
layers on said first and second surfaces with said
20 plating resist;

25 a fourth step of continuously covering said inner
surface of said via, said wiring layer inside of said
insulating layer exposed within said via and a portion
other than said plating resist out of said wiring layer
on said first surface of said insulating layer with
said first plating layer;

 a fifth step of laminating said second plating

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layer on said first plating layer, and electrically connecting said wiring layer on said first surface and said wiring layer inside of said insulating layer by said first and second plating layers; and

5 a sixth step of removing said plating resist after an electric connection is completed between said wiring layers.